Aeronautical Systems Cente

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U.S. AIR FORCE

Methodology to Transition WSP2 Technologies

Charles R. Valley, Lead Emergin
Technologies Team (ASC/ENVV)
Jerad A. Ford (Battelle)
Jim L. Tankersley (Battelle)

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NDIA 30th Environmental and Energy Symposium and Exhibition

Introduction

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- **Background**
- **The ASC/ENVV team**
- **Requirements/Needs Identification**
- **Identifying and Ranking Technologies and Projects**
- **Securing Funding!**
- **Critical Success Factors**

History

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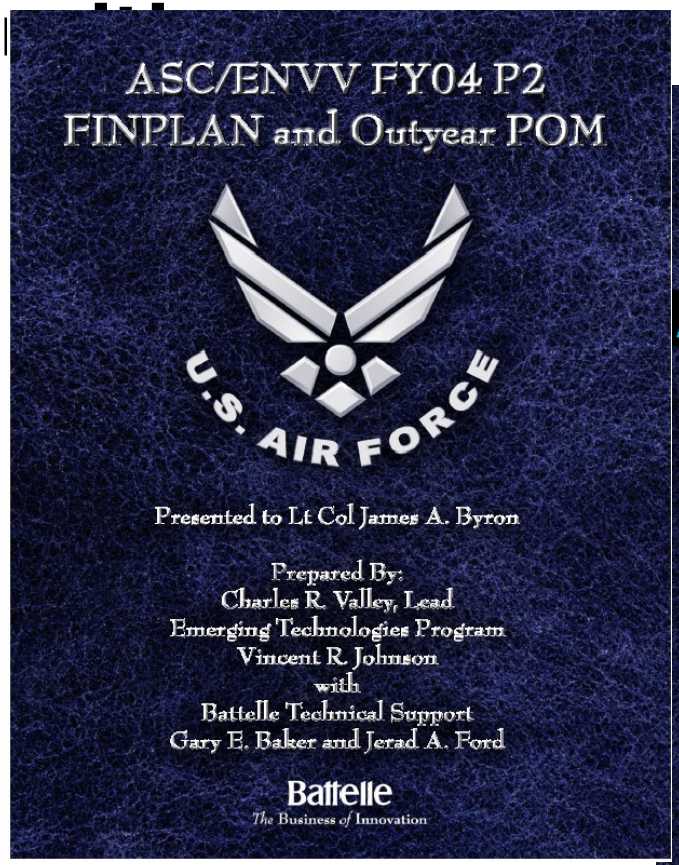
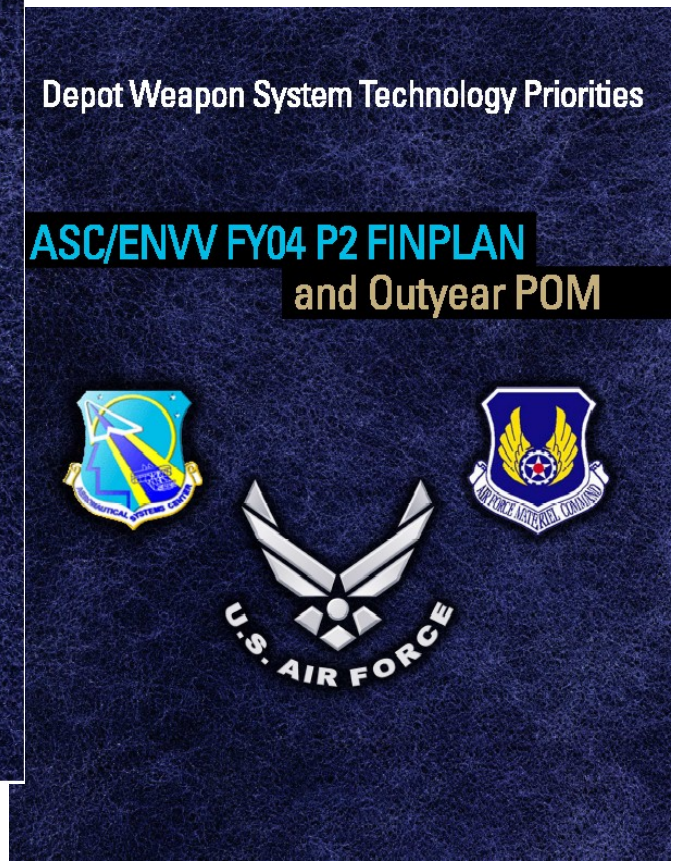
- **NTP: 25 March 2002**
- **Initial Focus: Depot WS Technology tra**





GOCO History

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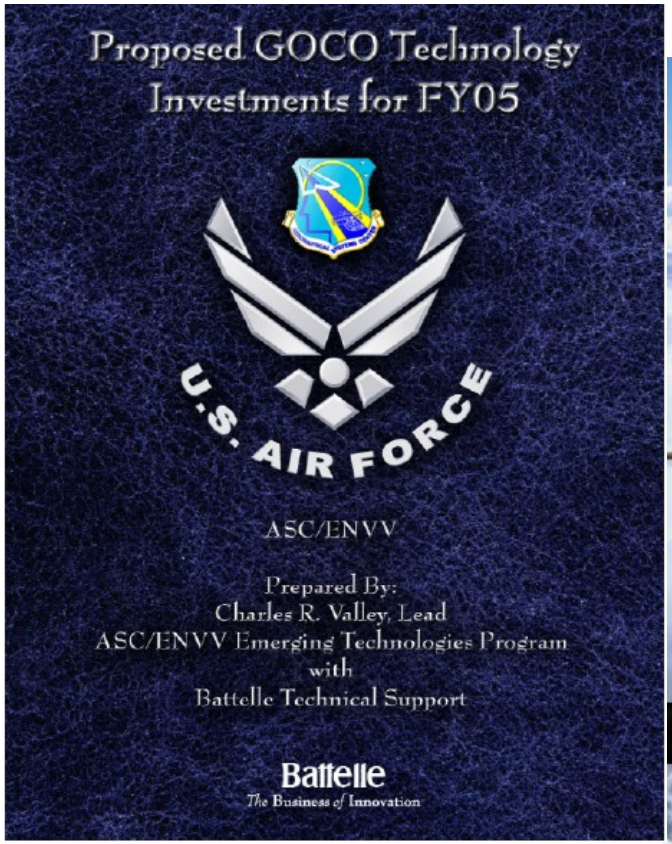
Started working GOCO projects May 2003



“The Team”

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Major Frank Boaz,

Chief ASC/ENVV

GOCO/SPO
Requirements F. Brown, Team Lead

Technology
Investments C. Valley, Team Lead

Project Execution
ASC/ENV Project Managers

ETT Overview

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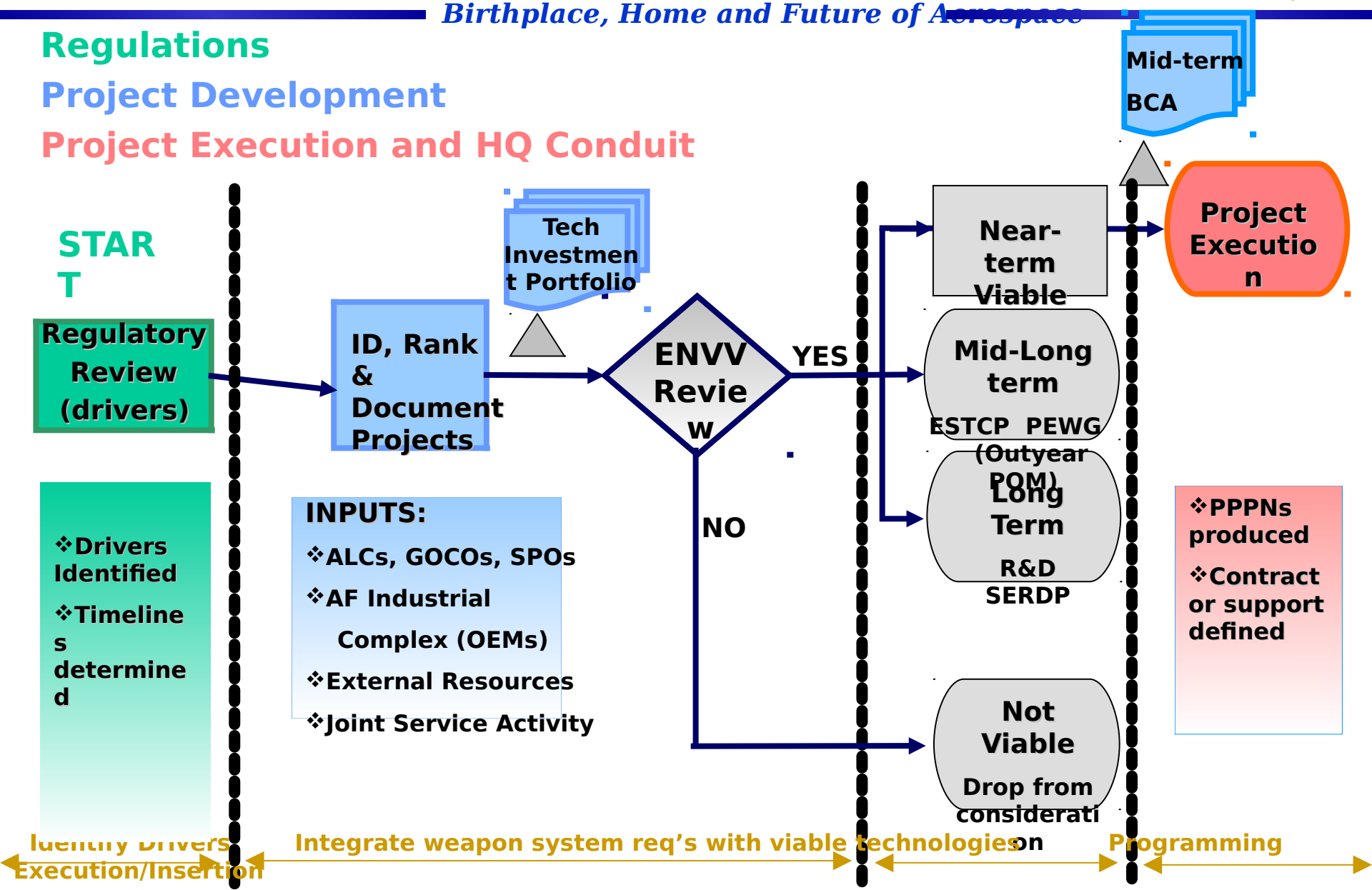

Requirements Identification

- **Examine all available requirements data**
  - **AF EDP database – warehouse of environmental technology needs AF-wide**
  - **Regulatory driver assessment**
  - **Other gathered requirements; GOCO and SPO needs, OC-ALC, WR-ALC and OO-ALC requirements, AFRL/ML Roadmap, OSD ESOH needs**
- **Examine Existing/Planned Projects for cross feed and/or continuation**
  - **JG-PP, JCAT, HCAT, NCMS/CTMA, JTEG, ESTCP, SERDP, AFRL techs etc.**

TECHNOLOGY STRATEGY & ROADMAPS
Overall Pollution Prevention & ES&H Goals

CURRENT STATUS

•REGULATIONS/MANDATES
- Compliance with federal, state and local environmental/ES&H regulations
- Meet requirements of all environmental and ES&H related executive orders
- Meet requirements of USAF (and other DoD) environmental/ES&H related directives and mandates
- Work on finding alternatives where there is any risk and worker exposure with materials and processes

•SPECIFICATIONS/STANDARDS
- Military/DoD - little/no flexibility: material or process driven
- Implementing some DoD performance specifications

•TECHNICAL ORDERS
- Traditional work flow/load and facilities
- Material and/or process driven with few alternatives available
- Difficult to change

•WEAPON SYSTEM ACQUISITION
- Some HazMat/VOC/HAP/ODC alternatives identified during design stage and called out

INTERMEDIATE GOAL

•REGULATIONS/MANDATES
- Comply with proposed federal, state and local regulations
- Meet requirements of all proposed environmental/ES&H related EOs
- Meet proposed requirements of USAF (and other DoD) environmental/ES&H related directives and mandates
- Risks and exposures eliminated for all but a few materials and processes (e.g., limited Cd use on some parts)

•SPECIFICATIONS/STANDARDS
- Some industry specifications available for use (most based on MIL SPECS)
- Input to new industry specifications (emphasis on performance not process)

•TECHNICAL ORDERS
- Changing work flow/load and facilities
- Most process driven with some alternatives available and called out
- Easier to modify or change

•WEAPON SYSTEM ACQUISITION
- Designs incorporate some qualified alternatives; others being qualified

LONG TERM GOAL

•REGULATIONS/MANDATES
- Fully compliant - no hazardous materials/processes in use
- Fully compliant with all environmental/ ES&H related Executive Orders
- Meet all USAF (and other DoD) environental/ ES&H related directives and mandates
- All adverse risks and harmful worker exposures eliminated

•SPECIFICATIONS/STANDARDS
- Majority industry based specifications (e.g., SAE AMS) in use
- Some DoD performance based specifications used where needed

•TECHNICAL ORDERS
- Work flow/load and facility independent
- All performance driven: alternatives called out to meet each application
- Broad coverage: no need to change

•WEAPON SYSTEM ACQUISITION
- Designs incorporate no HazMats, VOCs, HAPs or ODCs

Environmental Development Planning

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https://xre22.brooks.af.mil

Identify technologies

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- Pool knowledge close at hand:
  - National Laboratories
    - ORNL, PNNL, BNL, etc. managed or co-managed by Battelle
  - NDCEE ongoing activities
    - CTC/Battelle/Booz Allen Hamilton
- Solicit OEMs for White Papers
  - Lockheed-Martin, Boeing, 3M, many more
- Dedicated Technical Research Contractor Staff

Ranking

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- GOCO, SPO, ALC identified techs
- High priority customer requirements + Matching Techs
- Technological Maturity Assessment
- Economics – Business Case Analysi
- Insertio

Cust. ID'd Techs

Needs and Requirements

Matching Technologies

Technology Investment Portfolio

Funding

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- **Ultimate criteria for P2 determined by funding authority**

Pervasiveness	Pervasiveness Score	
DOD Wide	20	Max pts
Air Force Wide	15	20
MAJCOM Wide	10	
Local Air Force Installation	0	

P2 Benefit	Benefit Score	
Reduce Permitted Air Emissions	10	Max pts
Reduce Permitted Water Emissions	10	60
Reduce HAZWASTE disposed	10	
Reduce HAZMAT Demand	10	
Reduce TRI Releases/Transfer	10	
Reduce Energy/Resource Consumption	5	
Reduce Solid Waste Disposal	5	
Not Selected	0	

Payback based on Total Operating Cost Savings	Payback Score	
<1 Yr	20	Max pts
1-2 Yr	16	20
2-3 Yr	12	
3-4 Yr	8	
4-5 Yr	4	
>5 or not defined	0	

% Esh Cost Savings	Esh % Score	
100-76%	20	Max pts
75-51%	15	20
26-50%	10	
1-25%	5	
0 or not defined	0	

Hierarchy Description	Hierarchy Score	
Source Reduction/Substitution/Process Mod	20	Max pts
Reuse	10	20
Recycling	10	
Treatment	5	
Disposal	0	
Not applicable or not defined	0	

Environmental Development Planning Need Level	Need Score	
High	20	Max pts
Medium	10	20
Low	5	
Not applicable or not defined	0	

In-Kind Funding	In-Kind Funding Value	
Based on % of Project that is Joint Funded	0-100 pts	Max pts
		100
	Total Pts Available	260

Funding Continued

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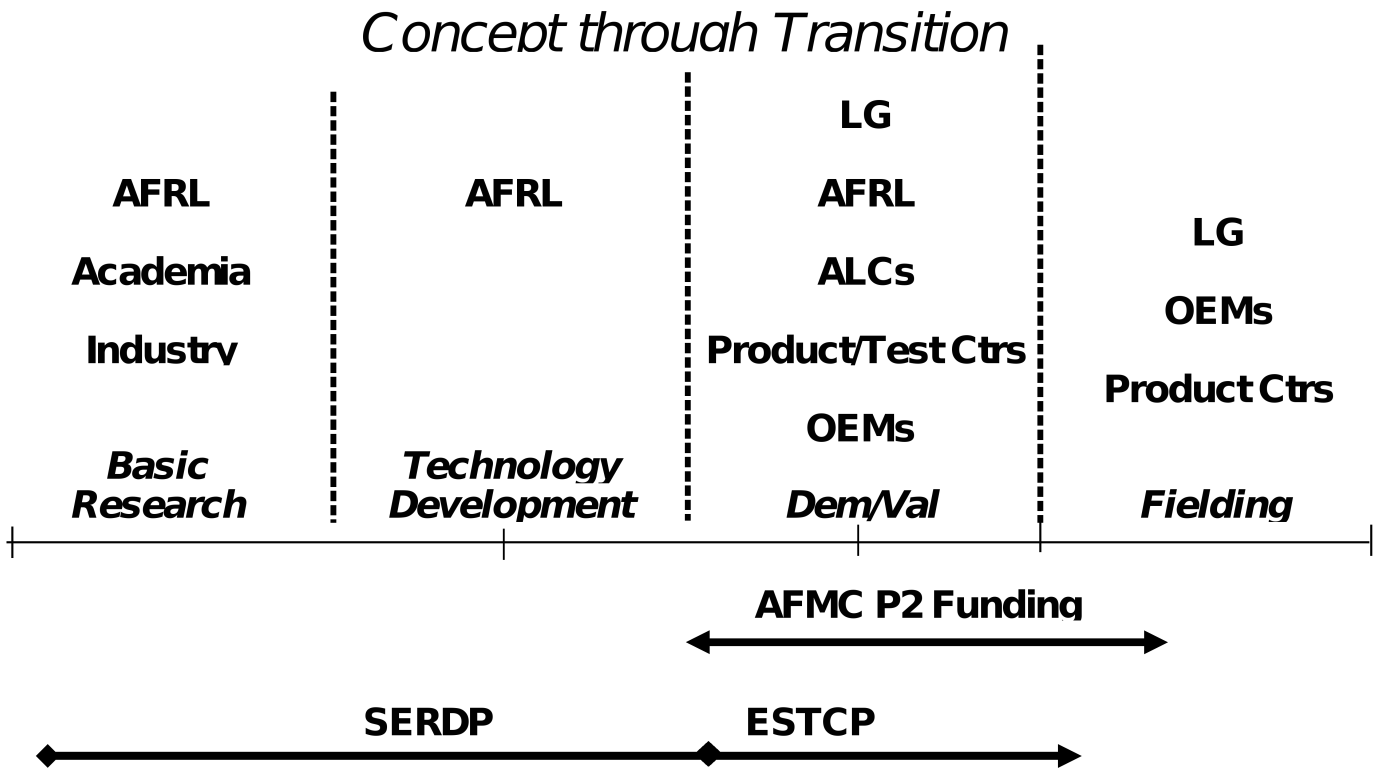

AFMC WSP2 funding

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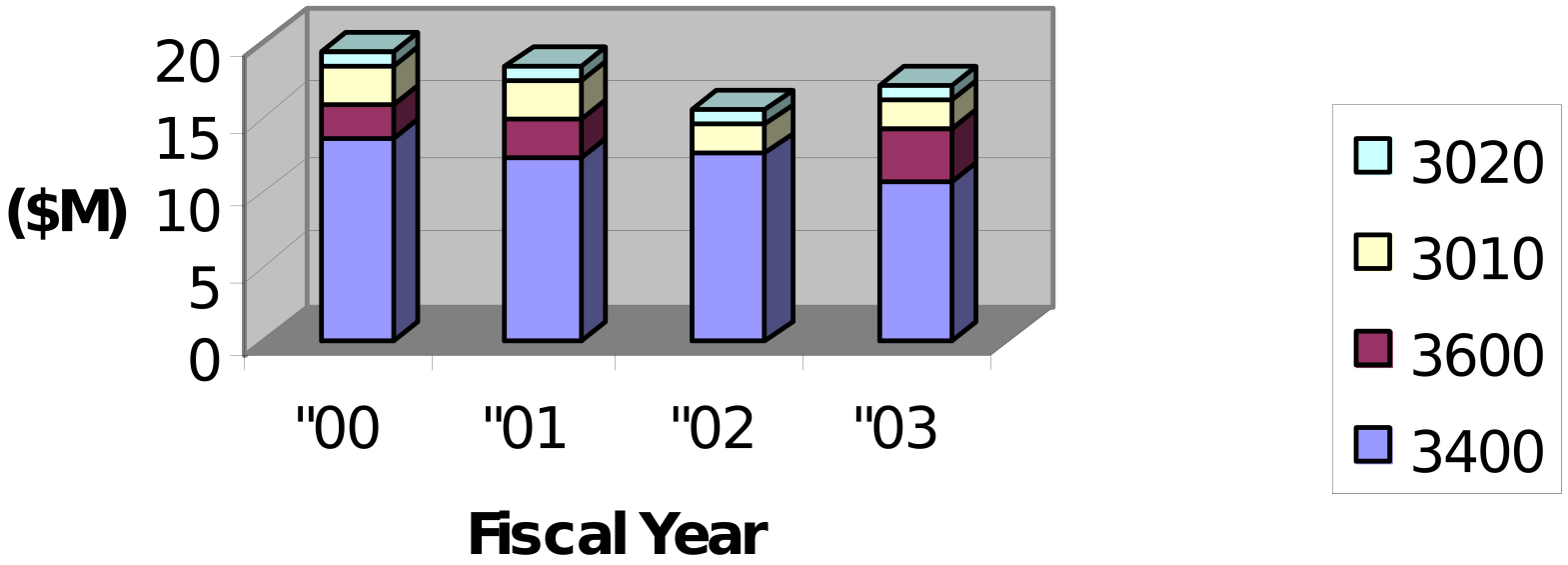
WS P2 Funding by Appropriation



Critical Success Factors

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- **Think outside the P2 box**
  - **Think Mission Readiness, Cost Savings are paramount these days**
- **Requirements Identification**
  - **Calibrate outyear program and coordination efforts overall roadmaps and strategic plans**
  - **Share and review requirements information from all sources**
  - **Establish integrating planning:**
  - **R&D to Qualification coordinate information flow between R&D activities (AFRL to ASC)**
- **Project Development**
  - **Focus on establishing Technological maturity**
  - **Solid economics**
- **Project Execution**
  - **Utilize contractor/OEM support for implementation on case by case basis**